

UNITED STATES MARINE CORPS  
Marine Aircraft Group 29  
2d Marine Aircraft Wing, FMF, Atlantic  
Marine Corps Air Station, (Helicopter)  
New River, Jacksonville, N. C. 28545

8: FOW:rrg  
4720  
21 June 1983

From: Ordnance Officer  
To: Commanding Officer (Attn: S-4)  
Via: Aircraft Maintenance Officer

Subj: Aviation Armament Shop

Ref: (a) OPNAVINST 4790.2  
(b) OPNAVINST 5530.13  
(c) COMNAVAIRLANT INST 8382.4

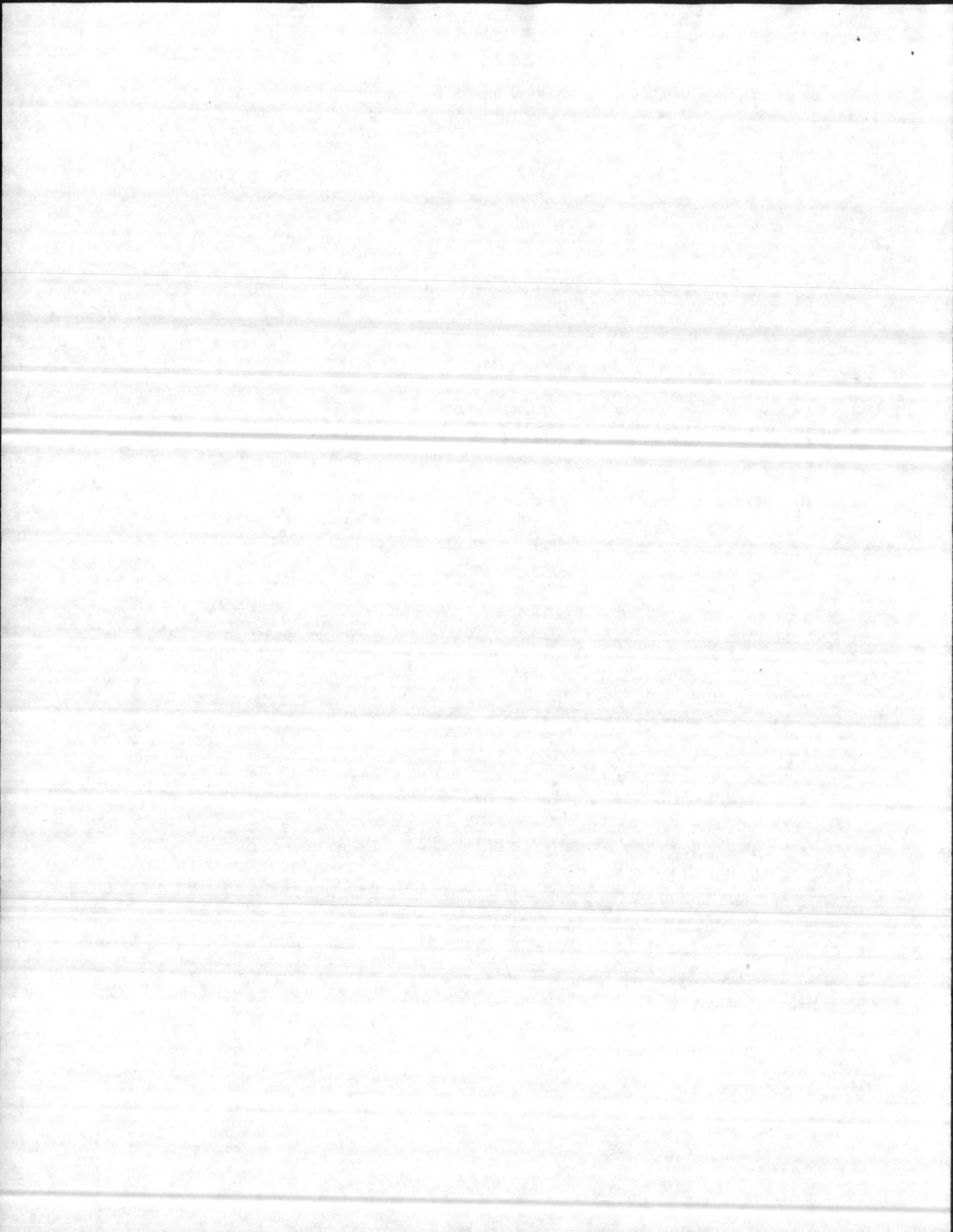
Encl: (1) Drawing of Aviation Armament Shop Building  
(2) Drawing of Small Arms Storage Area/Tool Control Area  
(3) Drawing of Turret and Bomb Rack Maintenance Area,  
Turret Test and Machinery Room  
(4) Drawing of Gun Pod Maintenance and Storage Area  
(5) Explanation of notes contained in Enclosures (1) through (4)

1. In accordance with the provisions of references (a) and (b) construction of an Aviation Armament Shop is required which will provide adequate security and maintenance spaces for armament equipment held and maintained by MAG-29 Ordnance.

2. Spaces constructed must meet the security requirements of reference (b) for storage of Arms which are classified as Security Risk Category II. Arms held in this command which fall in this category are .50 cal. Machine Guns, M-60 Machine Guns, GAU-2B Automatic Weapon, GPU-2/A Gun Pods, TOW Missile Launchers, M197 20mm Machine Guns with Gun Turrets.

3. The MAG-29 Armory spaces are inadequate to provide storage for the Aviation Weapons systems which require security provisions stipulated by reference (b) not to mention the lack of maintenance space which is required to maintain these weapons in accordance with reference (a) on a day to day basis.

4. Reference (c) requires that all Group Armament Launching Equipment be maintained in a Armament Equipment Pool controlled by the Ordnance Officer. Construction of these facilities would consolidate all of the high risk Aviation Weapons in one location for storage and maintenance.



5. This project will provide 2184 sq.ft. of high security storage space for the following items:

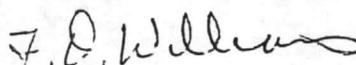
(a)	M1 218 .50 cal. Machine Guns	175 ea.
(b)	M1919 Machine Guns	98 ea.
(c)	M1919A 7.62 Mini-Gun	14 ea.
(d)	M1919A 7.62 Mini-Gun	6 ea.
(e)	Gun Pod GPU-2/A	11 ea.
(f)	Missile Launcher	48 ea.

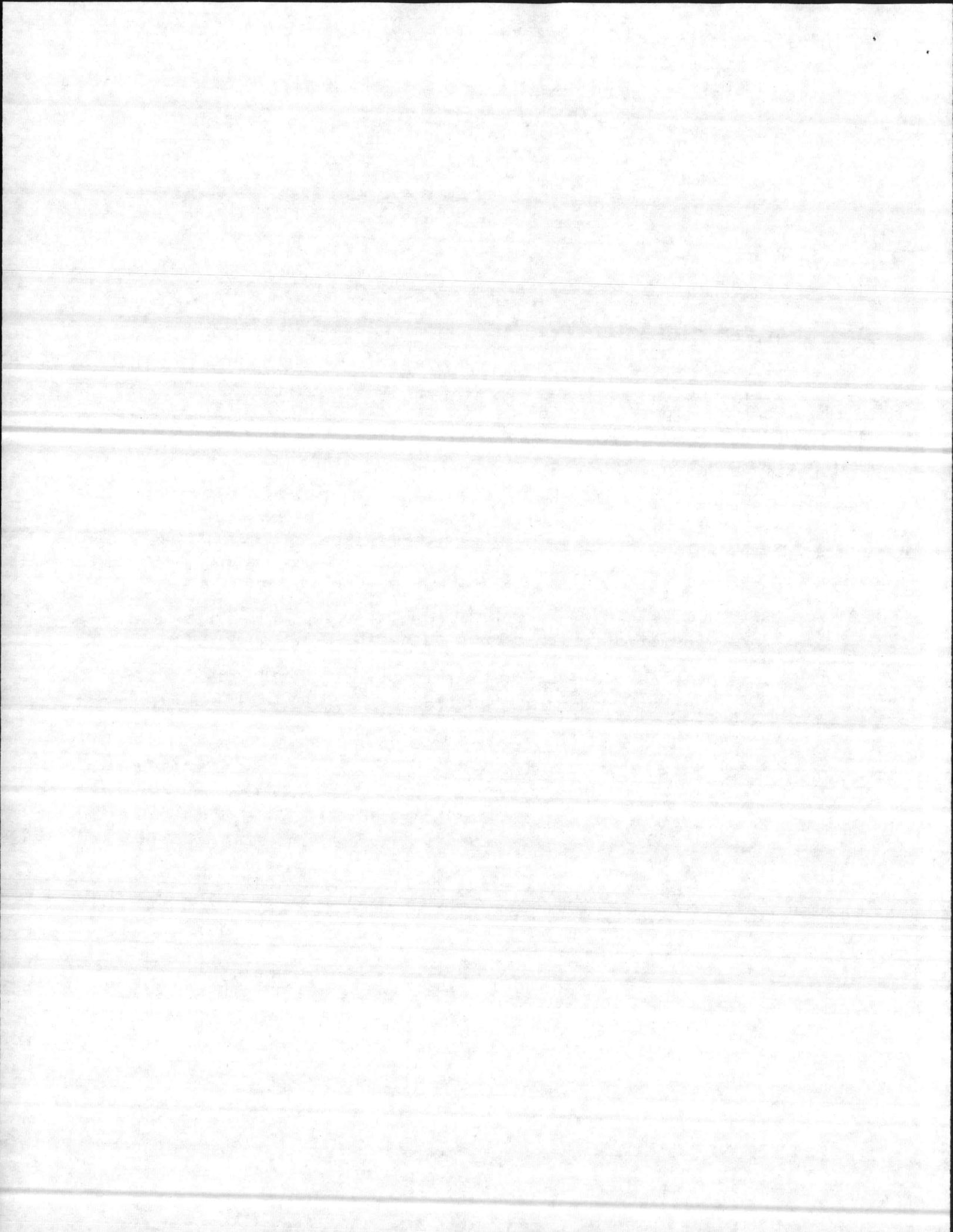
6. Maintenance, Storage and Office spaces, to provide Intermediate Maintenance Support to Squadrons of MAG-Twenty Nine will occupy 8516 sq.ft. of this building. Total space requirements are 10,700 sq.ft. as illustrated in enclosure (1) and explained in enclosures (2) through (5).

7. Currently the MAG-29 Aviation Armament Shop utilizes 2,220 sq.ft. to provide IMA Support. Due to inadequate Maintenance/Storage spaces, the Ordnance Officer can not physically control the Armament Equipment Pool, nor can NRFI Material be maintained in the Ordnance section while awaiting Maintenance. The above mentioned inadequacies also precludes simultaneous maintenance functions, Turret repair, Gun Pod repair, etc.

8. The ultimate impact of inadequate facilities are as follows:

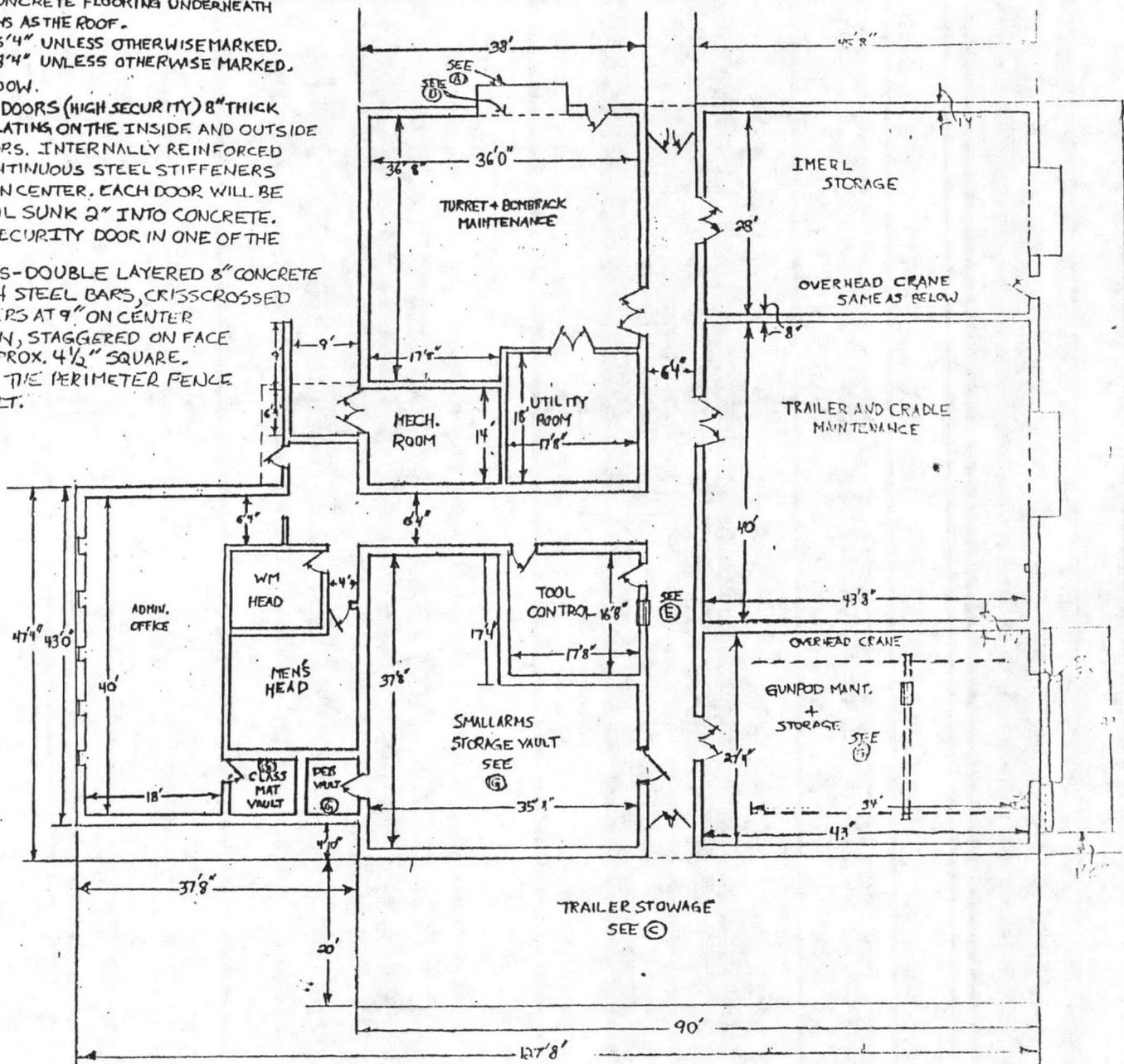
- (a) A security compromise on storage of sensitive weapons systems
- (b) Decrease in Squadron Readiness due to backlog of Maintenance to be performed which cannot be performed simultaneously with other Maintenance functions.
- (c) Possible loss of expensive Armament Equipment Pool Items due to lack of positive control.

  
F.O. WILLIAMS



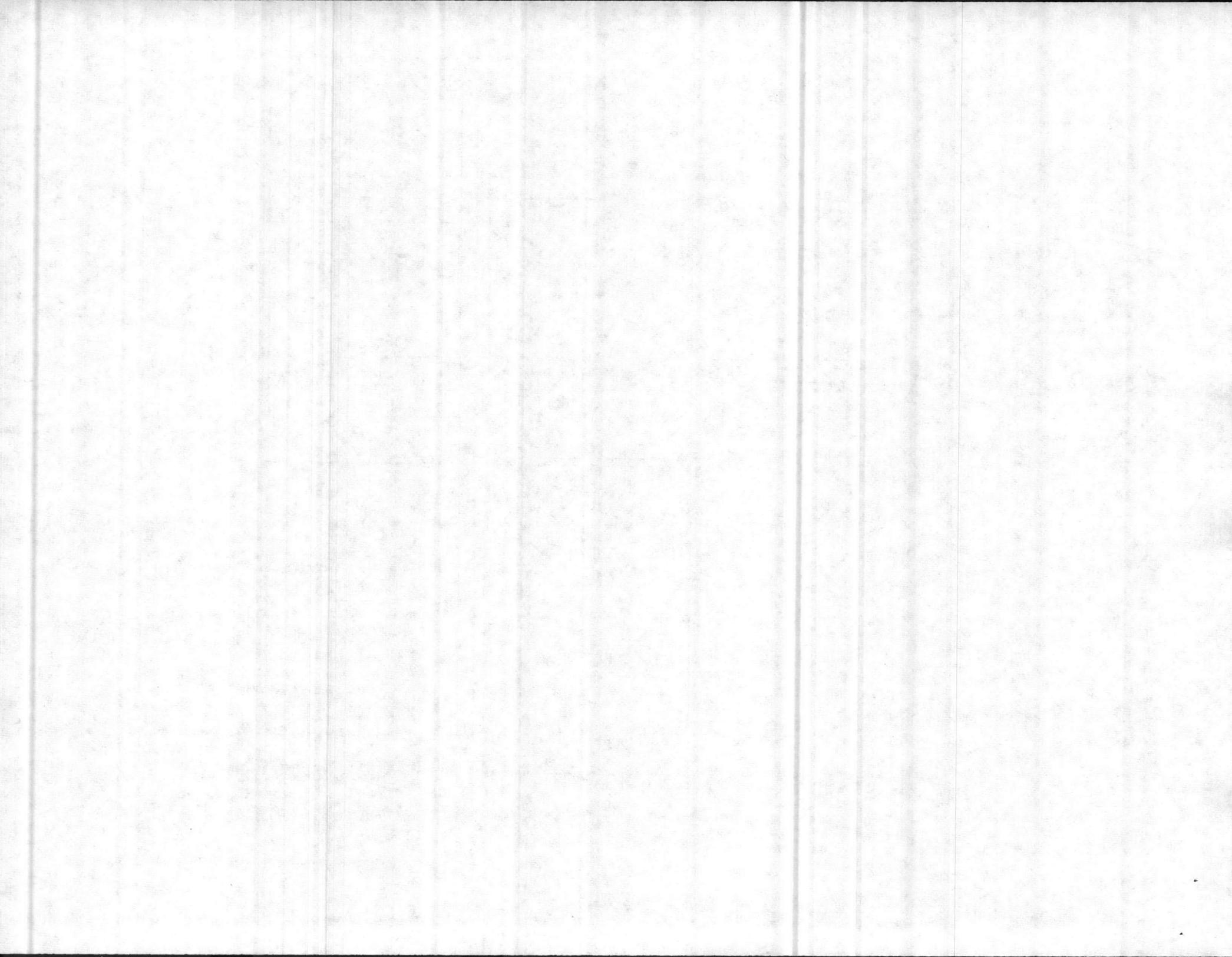
## NOTES:

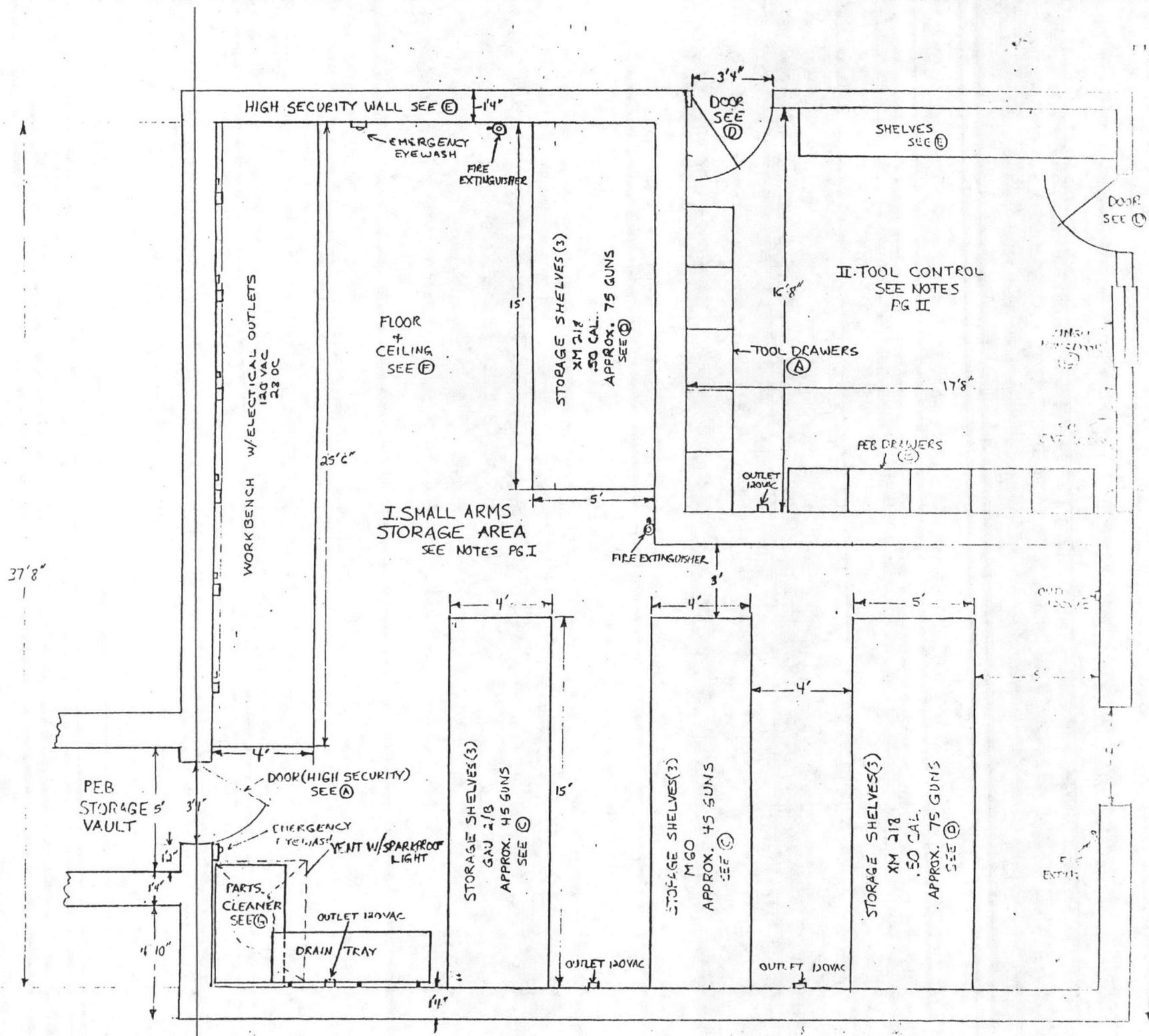
- (A) SLOPE CONCRETE DOWN AWAY FROM BUILDING (TYPICAL).
- (B) 12' x 12' OVER HEAD ELECTRIC DOOR (TYPICAL).
- (C) 20' x 90' METAL ROOF SLOPING FROM 12' AT THE EDGE OF THE BUILDING, TO 9' AT THE EDGE OF THE ROOF, FROM THE GROUND WITH A CONCRETE FLOORING UNDERNEATH THE SAME DIMENSIONS AS THE ROOF.
- (D) ALL DOUBLE DOORS 6'4" UNLESS OTHERWISE MARKED. ALL SINGLE DOORS 3'4" UNLESS OTHERWISE MARKED.
- (E) SINGLE HUNG WINDOW.
- (F) ELECTRIC SLIDING DOORS (HIGH SECURITY) 8" THICK WITH 1/4" STEEL PLATING ON THE INSIDE AND OUTSIDE FACES OF THE DOORS. INTERNALLY REINFORCED WITH VERTICAL CONTINUOUS STEEL STIFFENERS SPACED 6" MAX. ON CENTER. EACH DOOR WILL BE SET ON A 12'6" RAIL SUNK 2" INTO CONCRETE. OPTIONAL HIGH SECURITY DOOR IN ONE OF THE SLIDING DOORS.
- (G) SECURITY WALLS - DOUBLE LAYERED 8" CONCRETE BLOCK WITH NO. 4 STEEL BARS, CRISSCROSSED IN BETWEEN LAYERS AT 9" ON CENTER IN EACH DIRECTION, STAGGERED ON FACE TO FORM GRID APPROX. 4 1/2" SQUARE.
- (H) ALL AREA INSIDE THE PERIMETER FENCE SHALL BE ASPHALT.

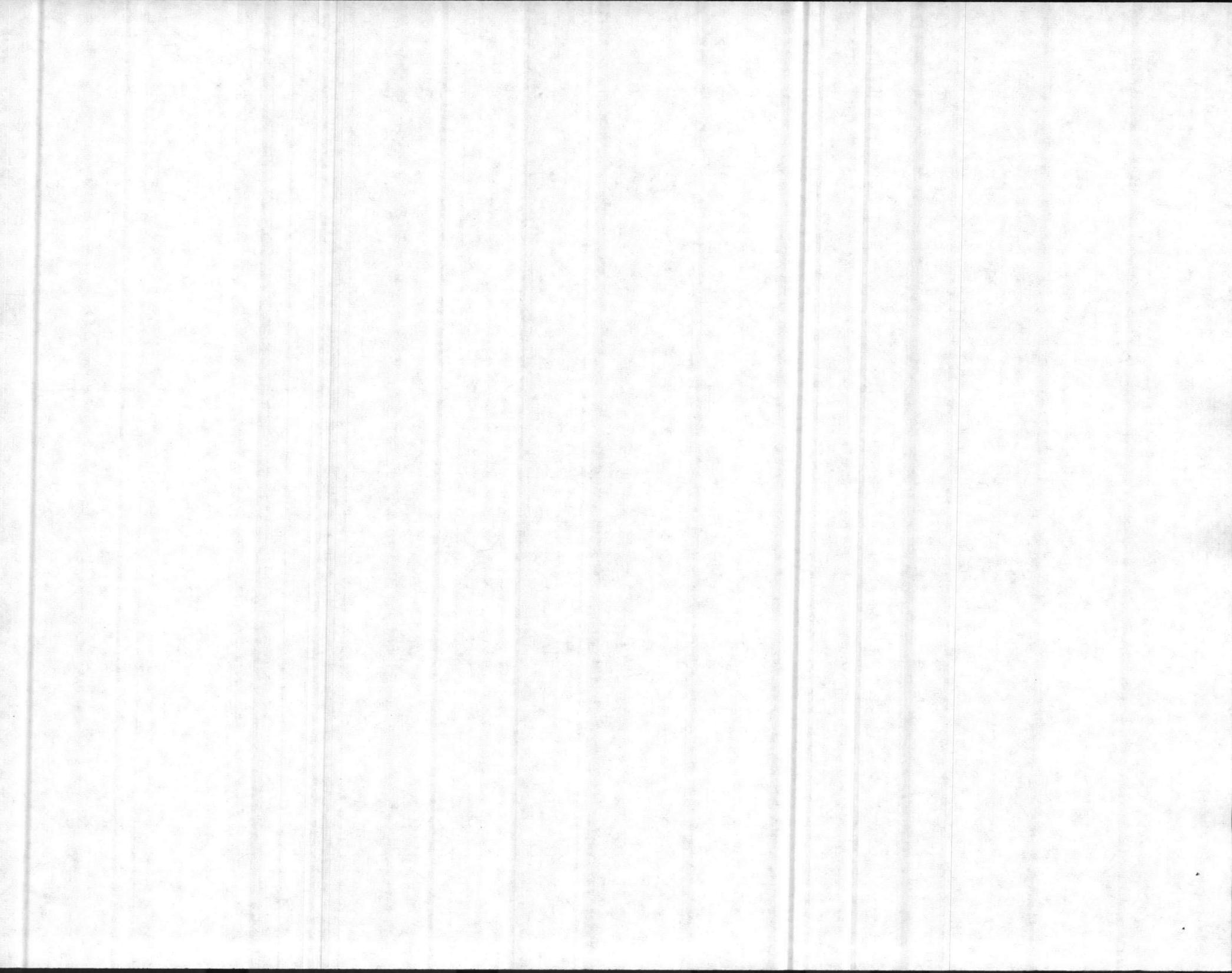
SCALE  
1/16" = 1'

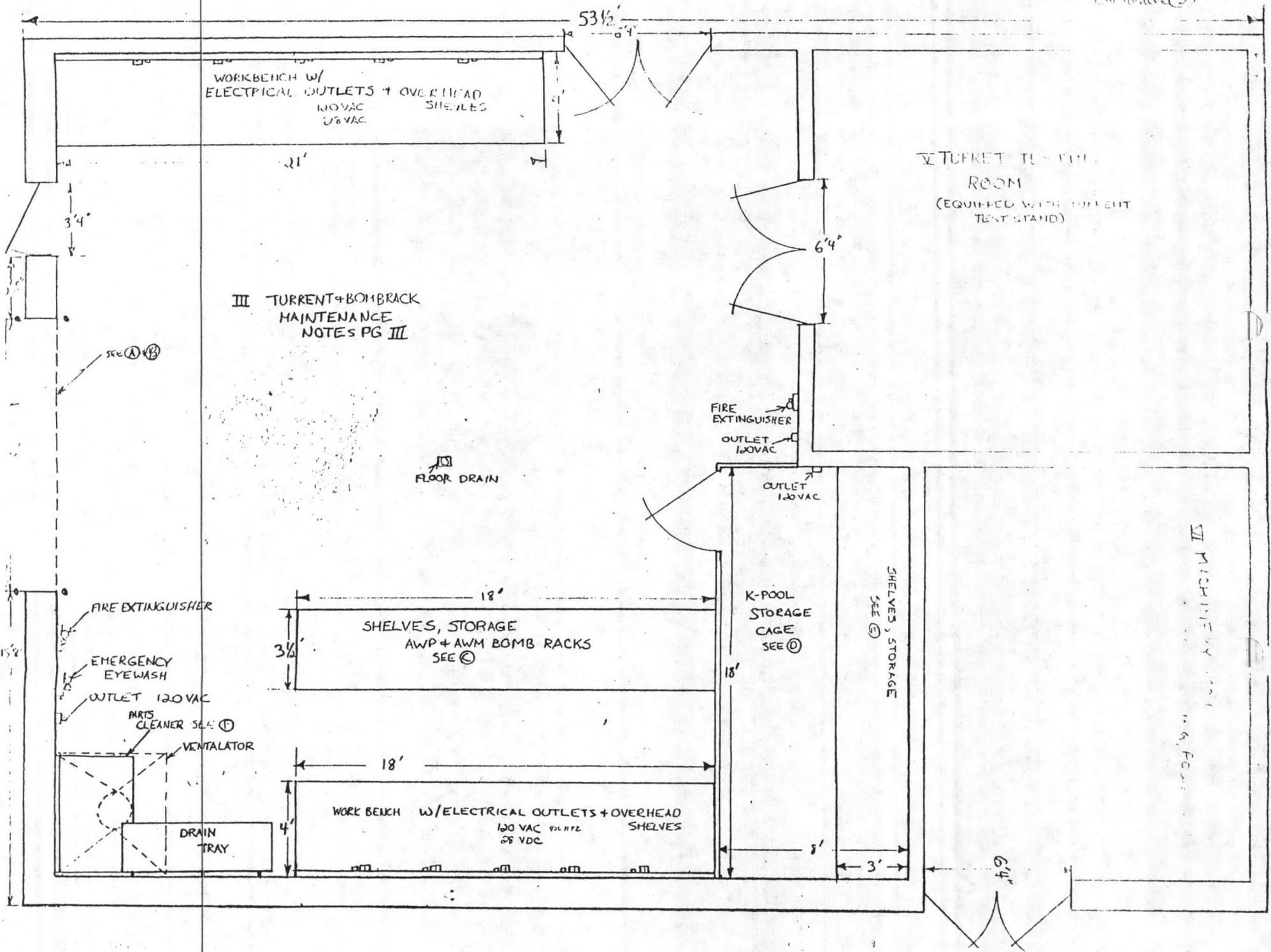
9000 18700

DRAWN BY  
DATE









WORKBENCH W/  
ELECTRICAL OUTLETS + OVERHEAD  
SHELVES  
120VAC  
250VAC

V TURRET TEST ROOM  
ROOM  
(EQUIPPED WITH TURRET  
TEST STAND)

III TURRENT+BOMBRACK  
MAINTENANCE  
NOTES PG III

FLOOR DRAIN

FIRE EXTINGUISHER

OUTLET 120VAC

OUTLET 120VAC

FIRE EXTINGUISHER

EMERGENCY EYEWASH

OUTLET 120VAC

PARTS CLEANER SEE ①

VENTILATOR

DRAIN TRAY

SHELVES, STORAGE  
AWP + AWM BOMB RACKS  
SEE ②

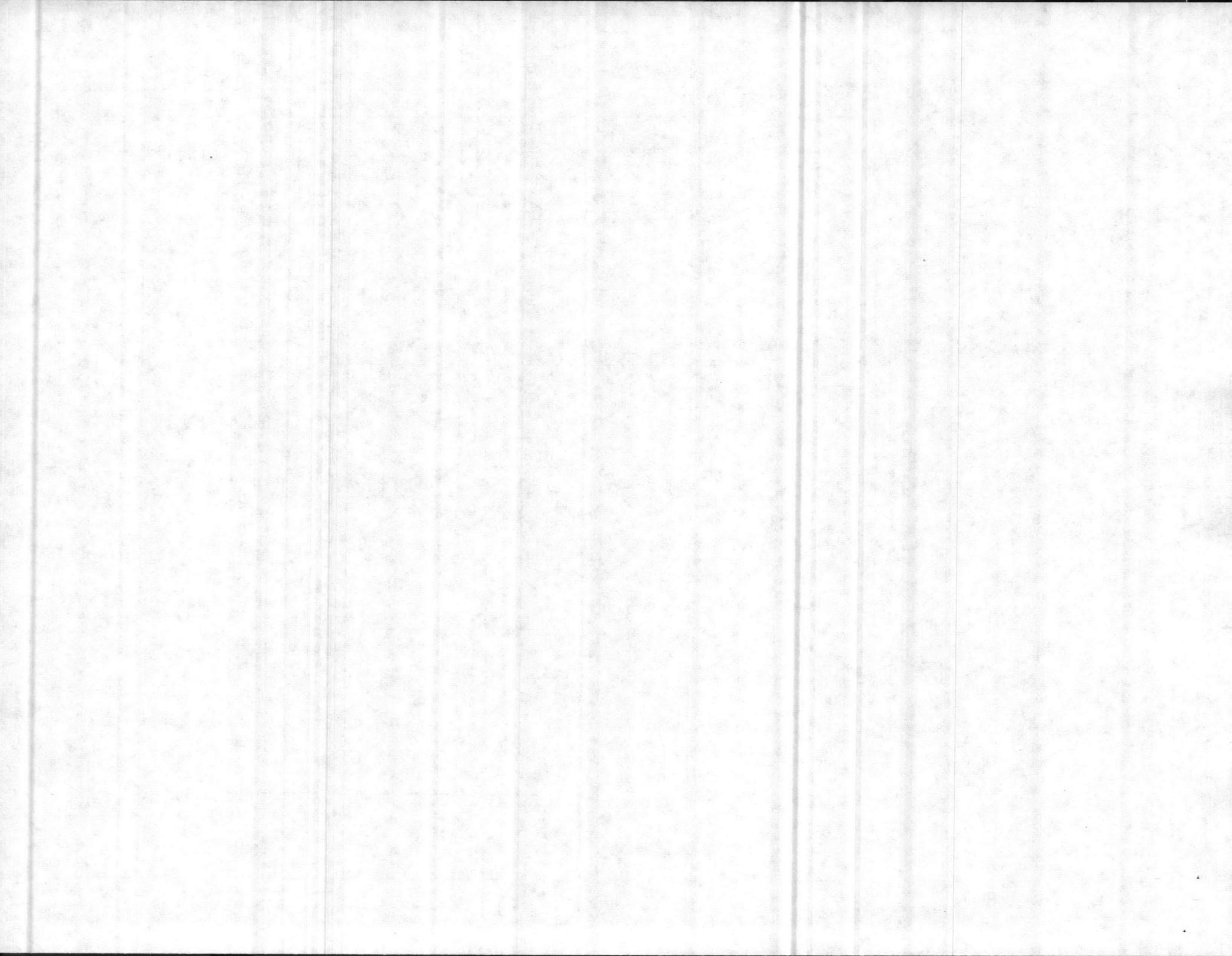
K-POOL  
STORAGE  
CAGE  
SEE ②

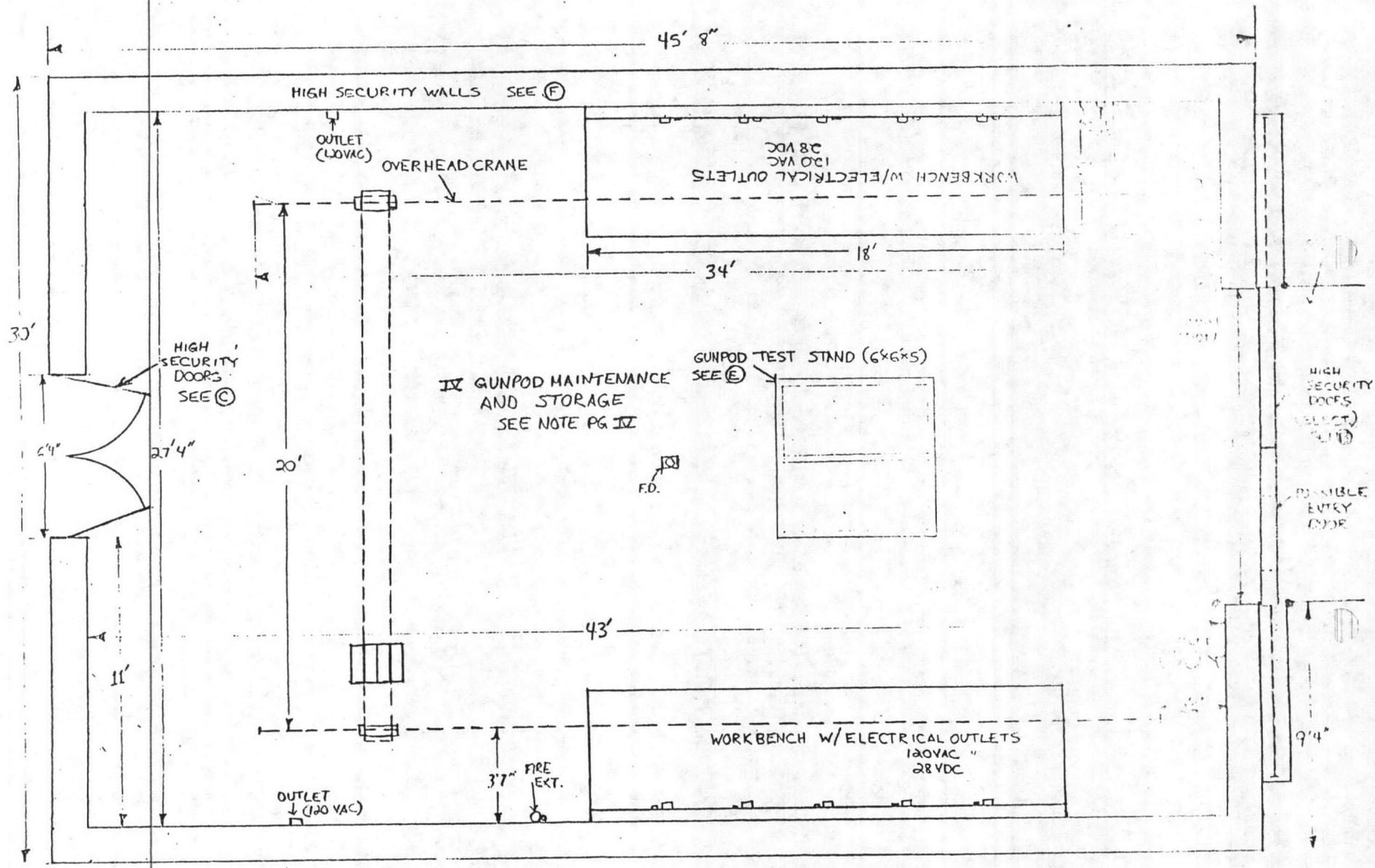
SHELVES, STORAGE  
SEE ②

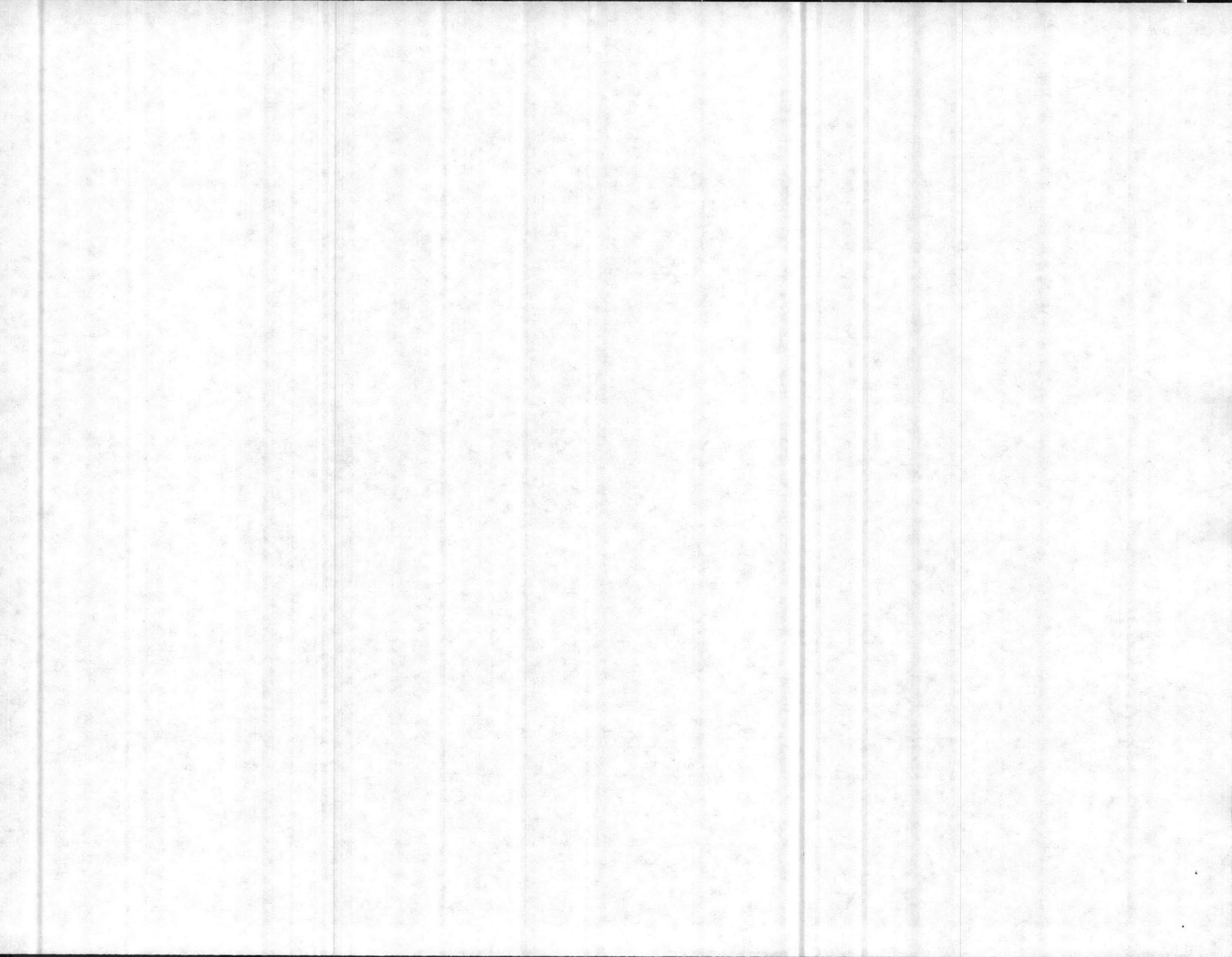
WORK BENCH W/ELECTRICAL OUTLETS + OVERHEAD  
SHELVES  
120 VAC 120VAC  
250 VDC

VII MISCELLANEOUS

11.4. FORM



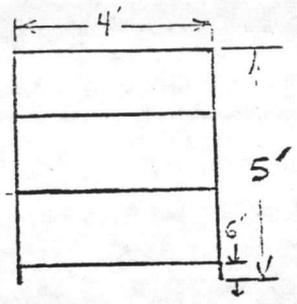
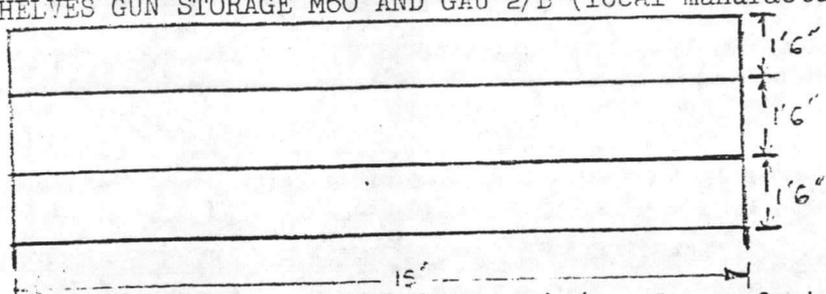




I. SMALL ARMS STORAGE AREA

- A. DOOR(HIGH SECURITY) WITH HASP AND PADLOCK(KEYED OR COMBINATION). L.3'4" x H.6' x W.1'9" INDUSTRIAL TYPE MIN. 14 GA. SKIN PLATE, INTERNALLY REINFORCED WITH VERTICAL CONTINUOUS STEEL STIFFENERS SPACED SIX INCHES ON CENTER MAX.
- B. DOOR CLASS 5 GSA APPROVED STEEL VAULT DOOR(three position dial type combination lock(changeable) also equipped with inside locking device. )

C. SHELVES GUN STORAGE M60 AND GAU 2/B (local manufacture)



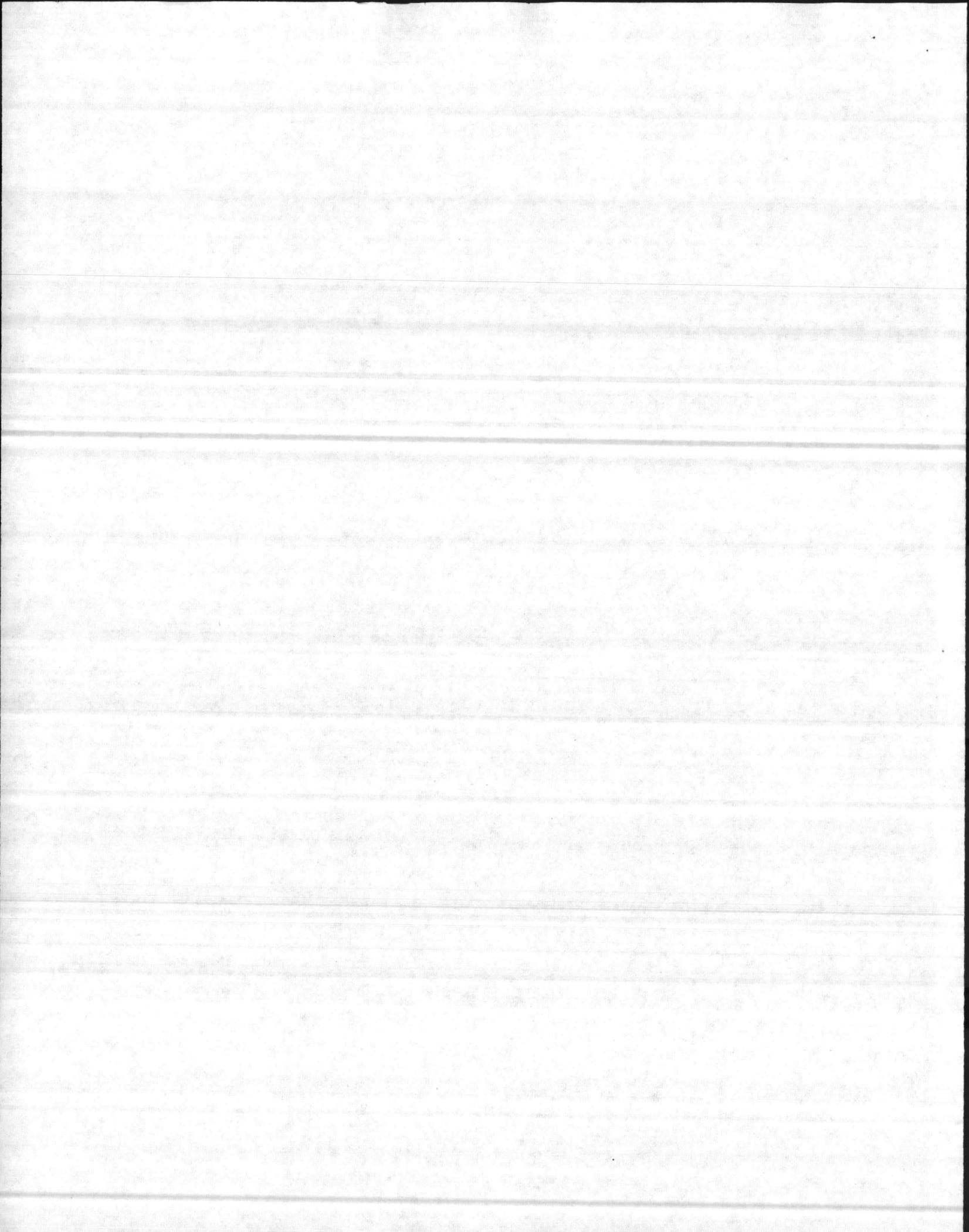
D. SHELVES GUN STORAGE XM218 (.50 cal), (local manufacture) same as above except 5' wide.

E. DOUBLE LAYERED 8" CONCRETE BLOCK WITH NO.4 STEEL BARS CRISSCROSSED IN BETWEEN LAYERS AT 9" on center in each direction, staggered on face to form a grid approx. 4 1/2" square.

F. FLOORING- MINIMUM 6" CONCRETE CONSTRUCTION REINFORCED WITH 6x6 OR W4xW4 MESH OR EQUIVALENT BARS.

CEILING- SLAB CONSTRUCTION WITH REINFORCING BAR SPACING THAT FORMS A GRID WHERE THE AREA OF ANY OPENING DOES NOT EXCEED 96 SQ. IN. USING NO. 4 BARS OR LARGER.

G. ULTRASONIC PARTS CLEANER (special manufacturer) L3'xW5'xH3' with a 6'6"x2' DRAIN TRAY OVERLAPPING THE EDGE OF THE CLEANER.



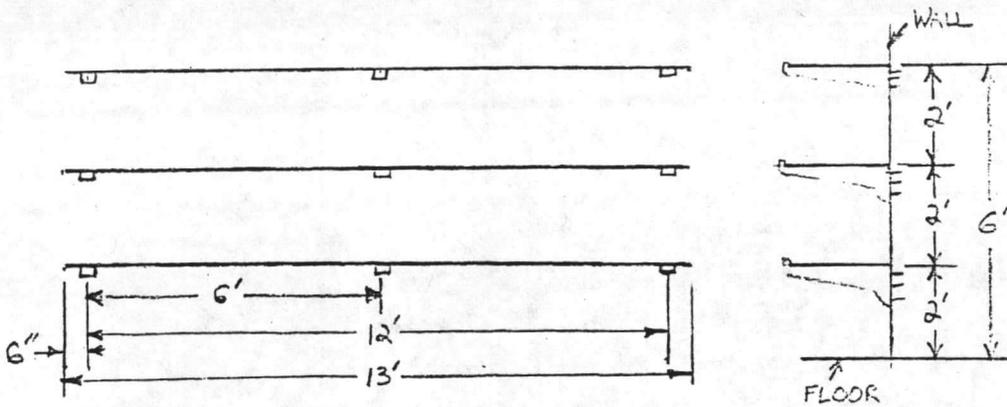
II. TOOL CONTROL AREA

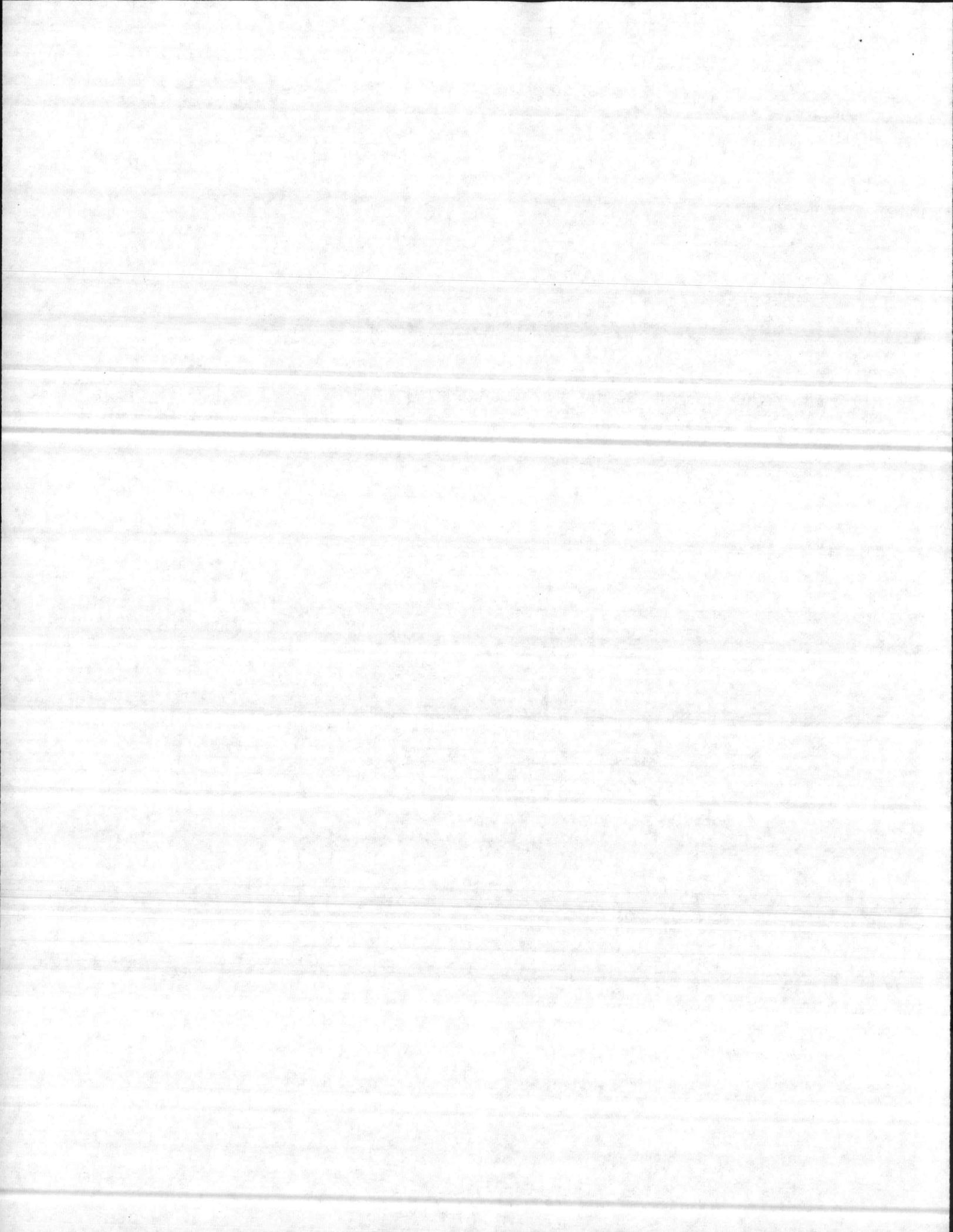
B. 120 JAW TRO- (same as above)

C. SINGLE HUNG WINDOW, 3'10" above the ground, L3'4" x H.3'.  
Roll up metal door (aluminum) covering opening.  
FSN-  
NSN-

D. METAL DOOR, 3'4" x 1 7/8" x 7' with dead bolt lock and keyed door handle lock

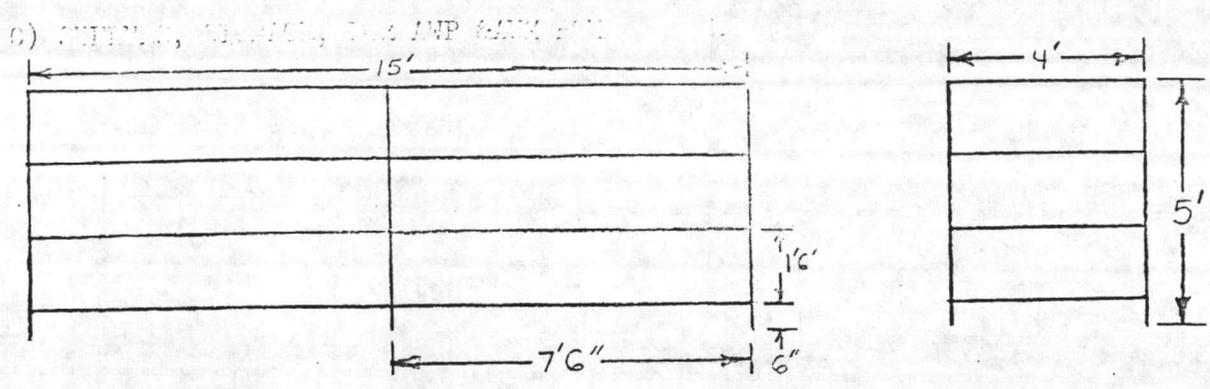
E. SHELVES- equipment storage L.13' xW .2' xH.6'.



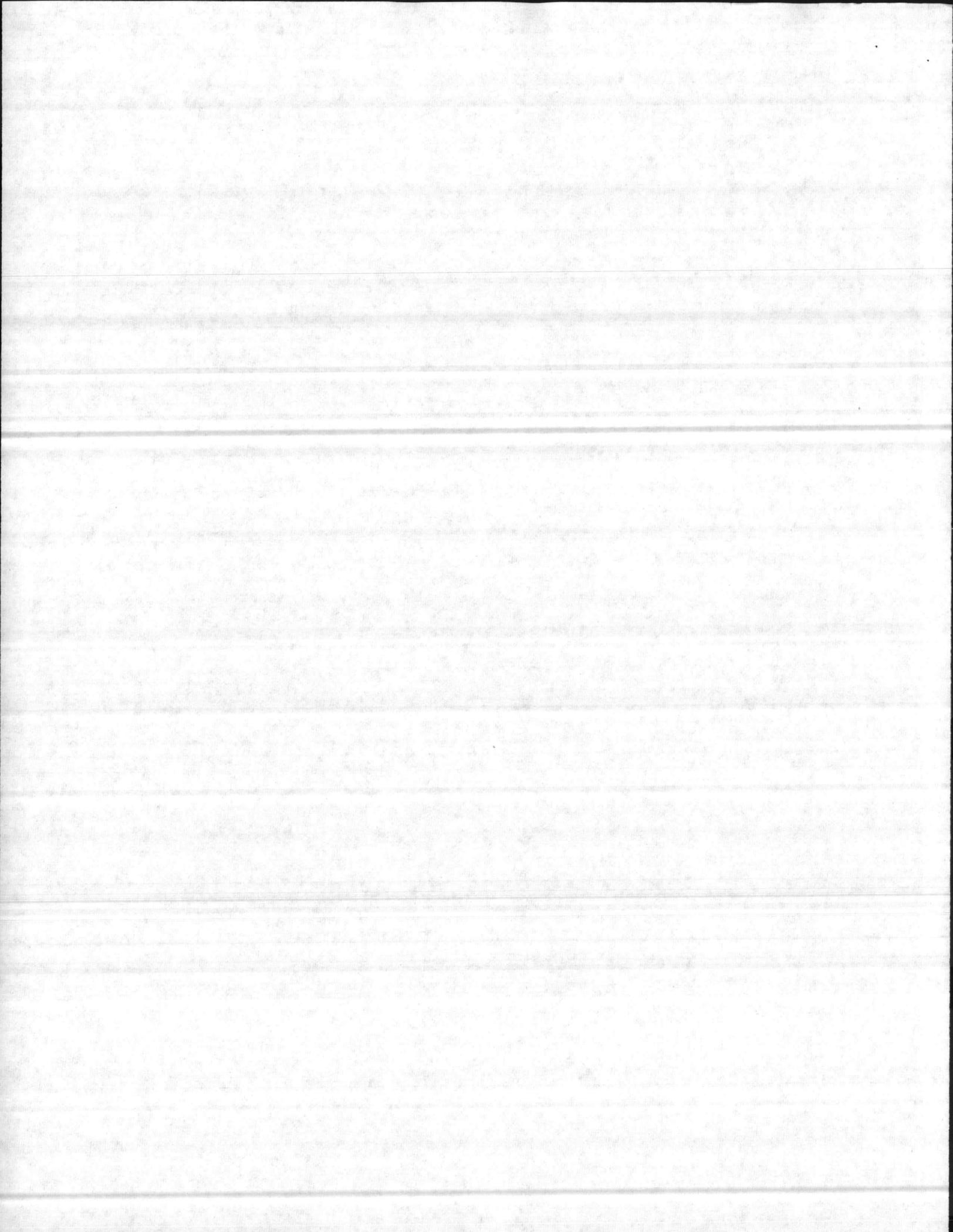


III TURRET & BOMBRACK  
MAINTENANCE

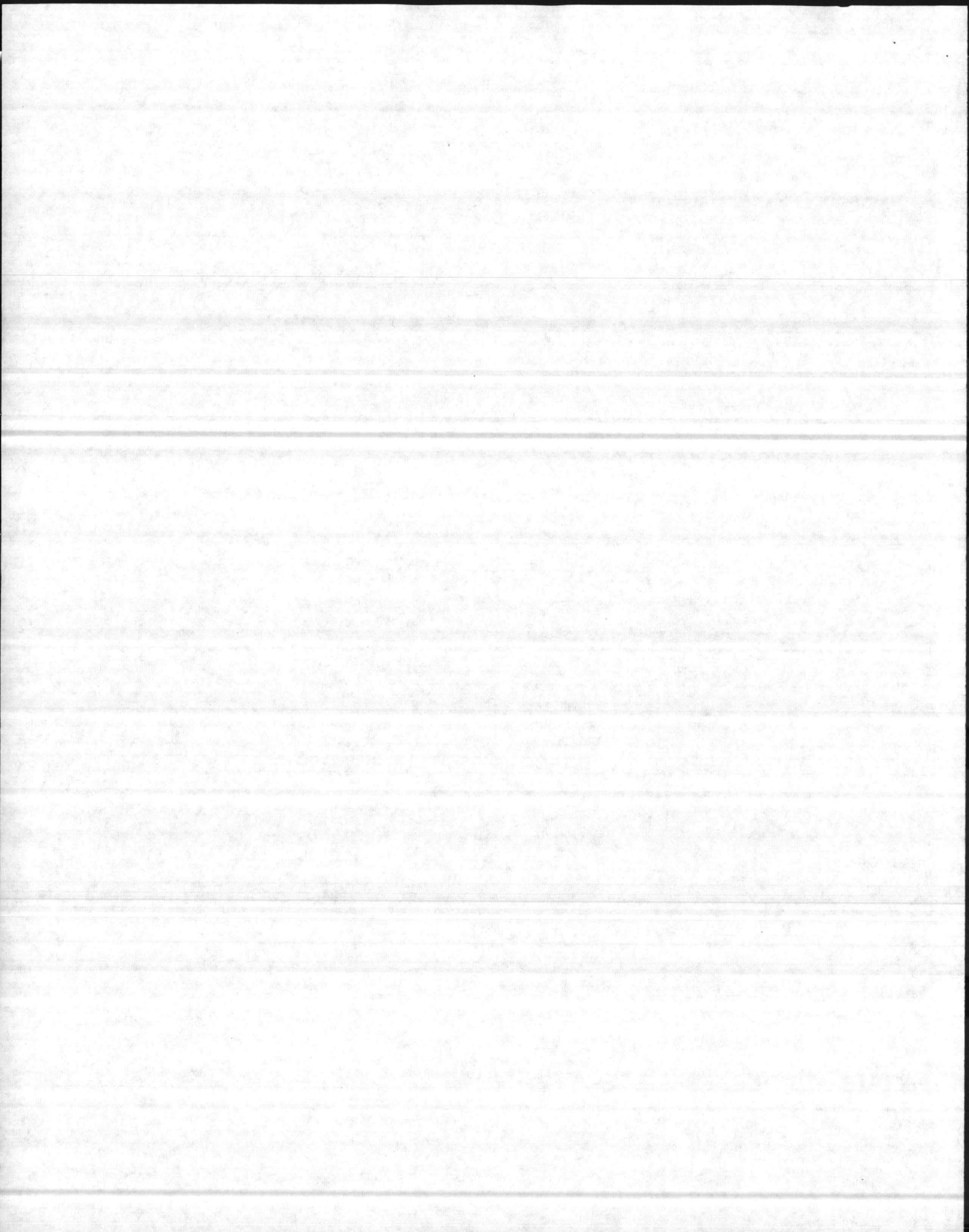
- C) 12' x 12' ELECTRIC PANEL



- D) SECURITY CAGE 18' x 18' WITH STORAGE SHELVES MADE FROM WIRE MESH.
- E) SHELVES, STORAGE (3) 18' x 3' MADE FROM WOOD OR STEEL MOUNTED ON THE WALL SPACED 2' APART.
- F) ULTRASONIC PARTS CLEANER (special manufacture) L3'xW5'xH3' WITH A 6'6" x 2' DRAIN TRAY OVERLAPPING THE EDGE OF THE CLEANER.



- B) CONCRETE FLOOR WITH 12' GUNPOD TEST STAND. THE FLOOR IS REINFORCED WITH NO. 4 STEEL STIPPLES SPACED 6" MAX. ON CENTER. RAIL CURB 2" INTO CONCRETE. SECURITY DOOR IN ONE OF THE SLIDING DOORS.
  - C) HIGH SECURITY DOOR (GSA CLASS 5 AT) STEEL VAULT DOOR) THREE POSITION DIAL TYPE CHANGABLE COMBINATION LOCK WITH INSIDE LOCKING DEVICE.
  - D) ULTRASONIC PARTS CLEANER (special manufacture) 5'x 4'x 4'.
  - E) GUNPOD TEST STAND (6'x 6'x 5') WITH BOMB RACK CAPABLE OF SUPPORTING THE GPU-2A DURING ELECTRICAL TESTING. (local manufacture).
  - F) DOUBLE LAYERED 8' CONCRETE BLOCK WITH NO. 4 STEEL BARS CRISSCROSSED IN BETWEEN LAYERS AT 9" ON CENTER IN EACH DIRECTION. STAGGERED ON FACE TO FORM A GRID APPROX. 4 1/2" SQUARE.
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## I. A1

ELECTRICAL OUTLETS (3)  
120 VAC 60 CPS  
LIGHTING- OVERHEAD FLUORESCENT LIGHTS.

## II. W. M. HEAD

POWER- ELECTRICAL OUTLETS (3) (2 ON MIRROR LIGHTS)  
120 VAC 60 CPS  
- LIGHTING  
120 VAC 60 CPS  
LIGHTING- OVERHEAD FLUORESCENT LIGHTS.

## III. MENS HEAD

POWER- ELECTRICAL OUTLETS (4) (3 ON MIRROR LIGHTS)  
120 VAC 60 CPS  
- LIGHTING  
120 VAC 60 CPS  
LIGHTING- OVERHEAD FLUORESCENT LIGHTS.  
- MIRROR FLUORESCENT LIGHTS (3)  
WITH ELECTRIC OUTLETS.

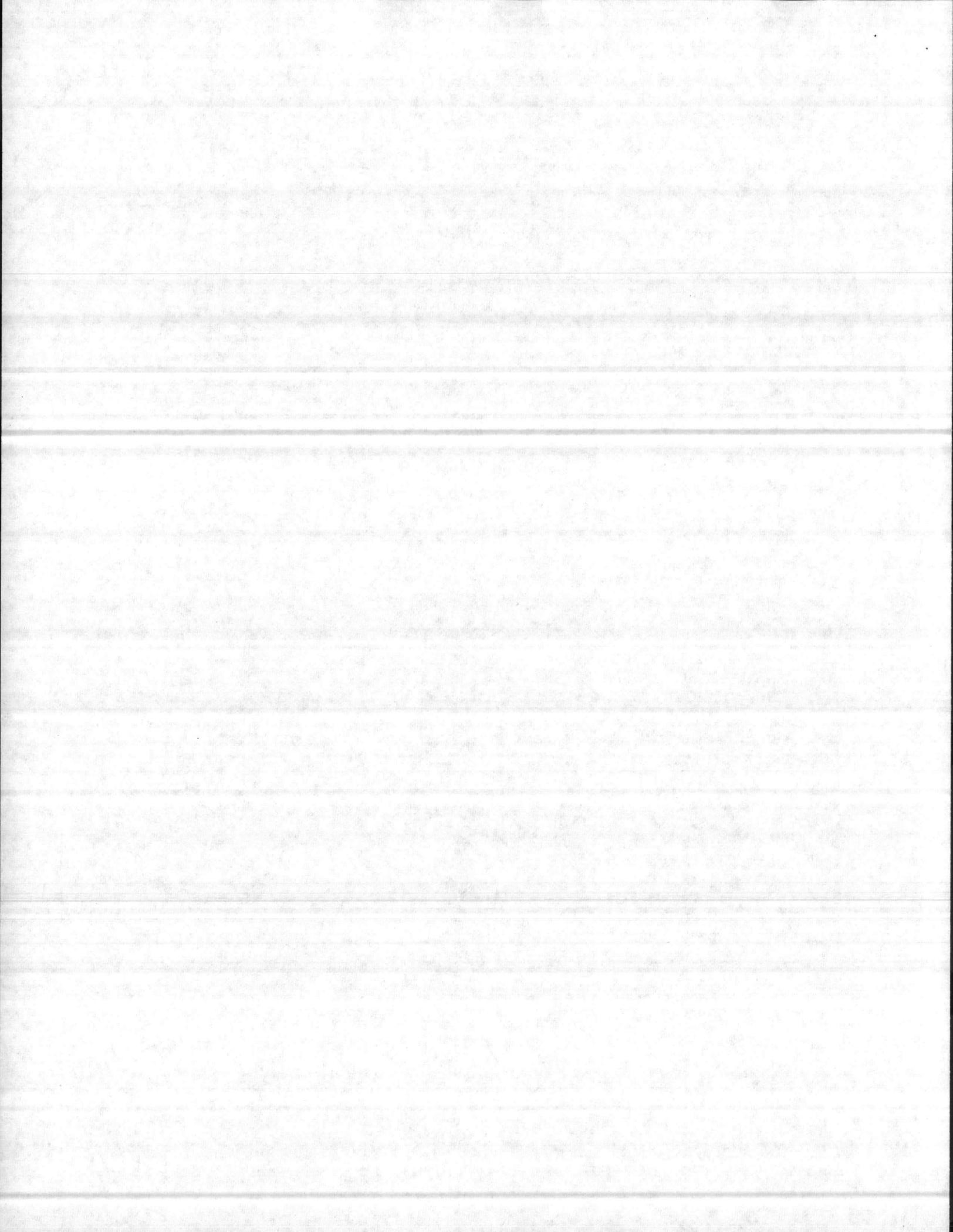
## IV. CLASS MAT. VAULT

POWER- LIGHTING  
120 VAC 60 CPS  
LIGHTING- OVERHEAD FLUORESCENT LIGHTS  
120 VAC 60 CPS

## V. TURRET &amp; BOMBRACK MAINTENANCE

POWER- ELECTRICAL OUTLETS(3)  
120 VAC 60 CPS  
LIGHTING- 120 VAC 60 CPS  
TEST BENCHES (2)  
5 ea. 120 VAC 60 CPS  
" 28 VDC  
" 120 VAC 400 CPS  
LIGHTING- OVERHEAD FLUORESCENT LIGHTS.  
120 VAC 60 CPS  
- SPARK PROOF LIGHTING FOR PARTS CLEANER  
120 VAC 60 CPS

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## TESTING ROOM

- ELECTRICAL OUTLET
- 120 VAC 60 CPS
- TEST UNIT (1) REPAIR
- 120 VAC 60 CPS
- 120 VAC 400 CPS
- TEST BENCHES (1)
- 120 VAC 60 CPS
- 120 VAC 400 CPS
- 28 VDC

## LIGHTING- OVERHEAD FLUORESCENT LIGHTS

120 VAC 60 CPS

## SPARK PROOF LIGHT FOR PARTS CLEANER

120 VAC 60 CPS

## VII. MACHINERY ROOM

- POWER- ELECTRICAL OUTLETS (2)
- 120 VAC 60 CPS
- 120 VAC 400 CPS SUPPLY SYSTEM
- 440 VAC 60 CPS 3ph
- MAIN POWER SUPPLY SYSTEM
- 220 VAC 60 CPS 3ph

## LIGHTING- OVERHEAD FLUORESCENT LIGHTS

120 VAC 60 CPS

## VIII. SMALL ARMS STORAGE VAULT

- POWER- ELECTRICAL OUTLETS (4)
  - 120 VAC 60 CPS
  - TEST BENCHES (1)
  - 120 VAC 60 CPS
  - 120 VAC 400 CPS
  - 28 VDC
  - LIGHTING- OVERHEAD FLUORESCENT LIGHTS
  - 120 VAC 60 CPS
  - LIGHTING- SPARK PROOF FOR PARTS CLEANER
  - 120VAC 60 CPS
-



## IX. TOOL STORAGE

POWER- LIGHTING- OVERHEAD FLUORESCENT LIGHTS  
120 VAC 60 CPS

## X. TOOL STORAGE

POWER- ELECTRICAL OUTLETS (4)  
120 VAC 60 CPS  
- LIGHTING, OVERHEAD FLUORESCENT LIGHTS  
120 VAC 60 CPS  
- POWER, OVERHEAD CRANE  
200 VAC 60 CPS 3ph

## XI. TOOL CONTROL ROOM

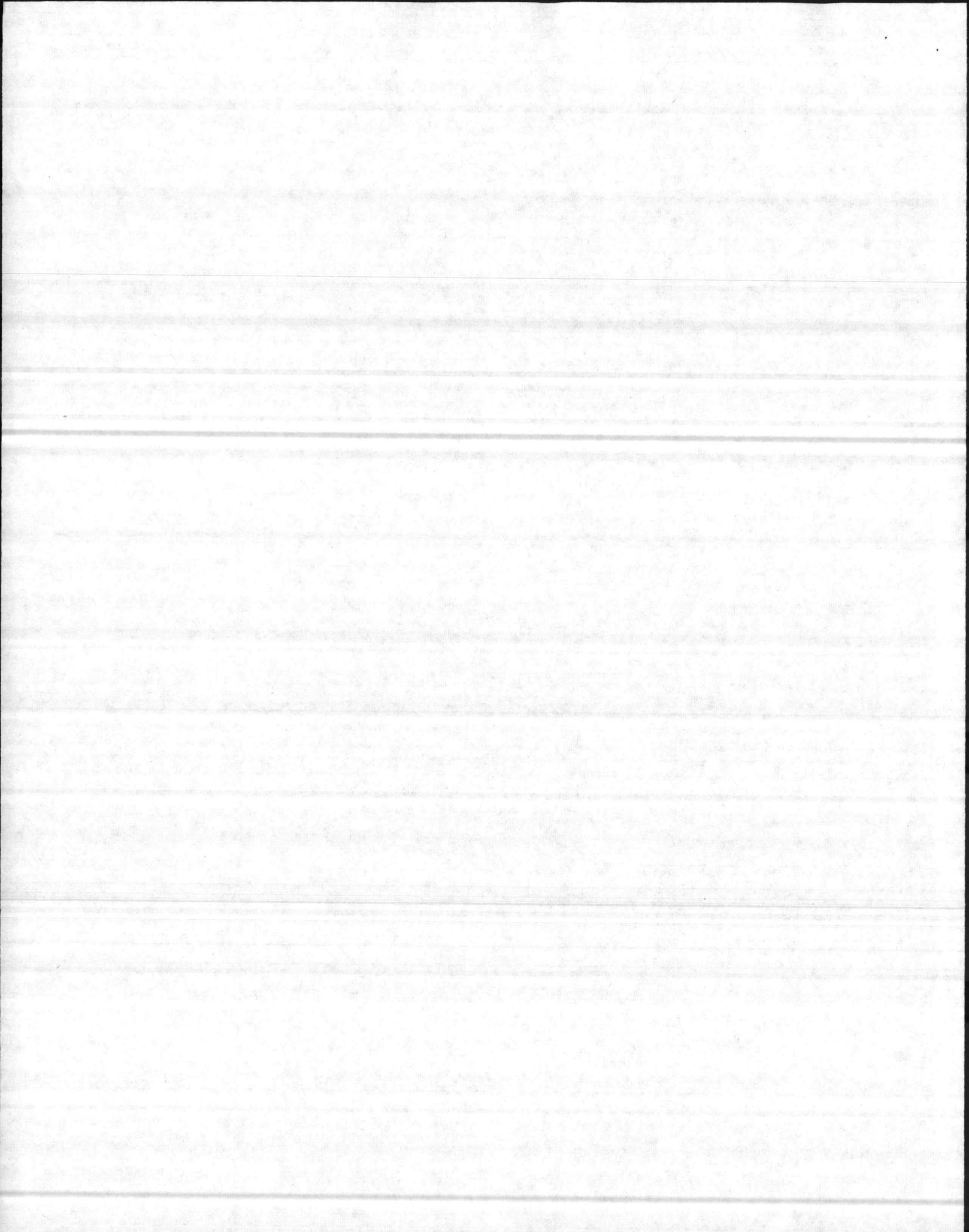
POWER- ELECTRICAL OUTLETS (2)  
120 VAC 60 CPS  
LIGHTING- OVERHEAD FLUORESCENT LIGHTS  
120 VAC 60 CPS

## XII. TRAILER &amp; CRADLE MAINTENANCE

POWER- ELECTRICAL OUTLETS (7)  
120 VAC 60 CPS  
ELECTRICAL OUTLETS (2)  
220 VAC 60 CPS 3ph  
LIGHTING- OVERHEAD FLUORESCENT LIGHTS  
120 VAC 60 CPS  
SPARK PROOF LIGHTING FOR PARTS CLEANER  
120 VAC 60 CPS

## XIII. GUNPOD MAINTENANCE AREA

POWER- ELECTRICAL OUTLETS (4)  
120 VAC 60 CPS  
TEST BENCHES (2)  
120 VAC 60 CPS  
120 VAC 400 CPS  
28 VDC  
LIGHTING- OVERHEAD FLUORESCENT LIGHTS  
120 VAC 60 CPS  
SPARK PROOF LIGHTING FOR PARTS CLEANER  
120 VAC 60 CPS



XIV. CORRIDORS

ELECTRICAL OUTLETS (3)  
120 VAC 60 CPS  
LIGHTING- OVERHEAD FLUORESCENT LIGHTS  
120 VAC 60 CPS

XV. TRAILER STORAGE

POWER- ELECTRICAL OUTLETS (3)  
120 VAC 60 CPS  
ELECTRICAL OUTLETS (2)  
220 VAC 60 CPS 3- $\phi$   
LIGHTING- OVERHEAD FLUORESCENT LIGHTS  
120 VAC 60 CPS

AIR LINE REQUIREMENTS

COMPRESSOR IN MACHINERY ROOM SUPPLYING LINES TO SMALL ARMS STORAGE VAULT, TURRET & BOMBRACK MAINTENANCE AREA, TRAILER & CRADLE MAINTENANCE AREA, AND GUNPOD MAINTENANCE AREA. 0-100 PSI

EMERGENCY LIGHTS

TWO IN EACH SHOP AREA, EXCEPT FOR AREAS SMALLER THAN 20' x 20' WHICH WILL HAVE 1 PER AREA. THREE LIGHTS IN CORRIDORS.

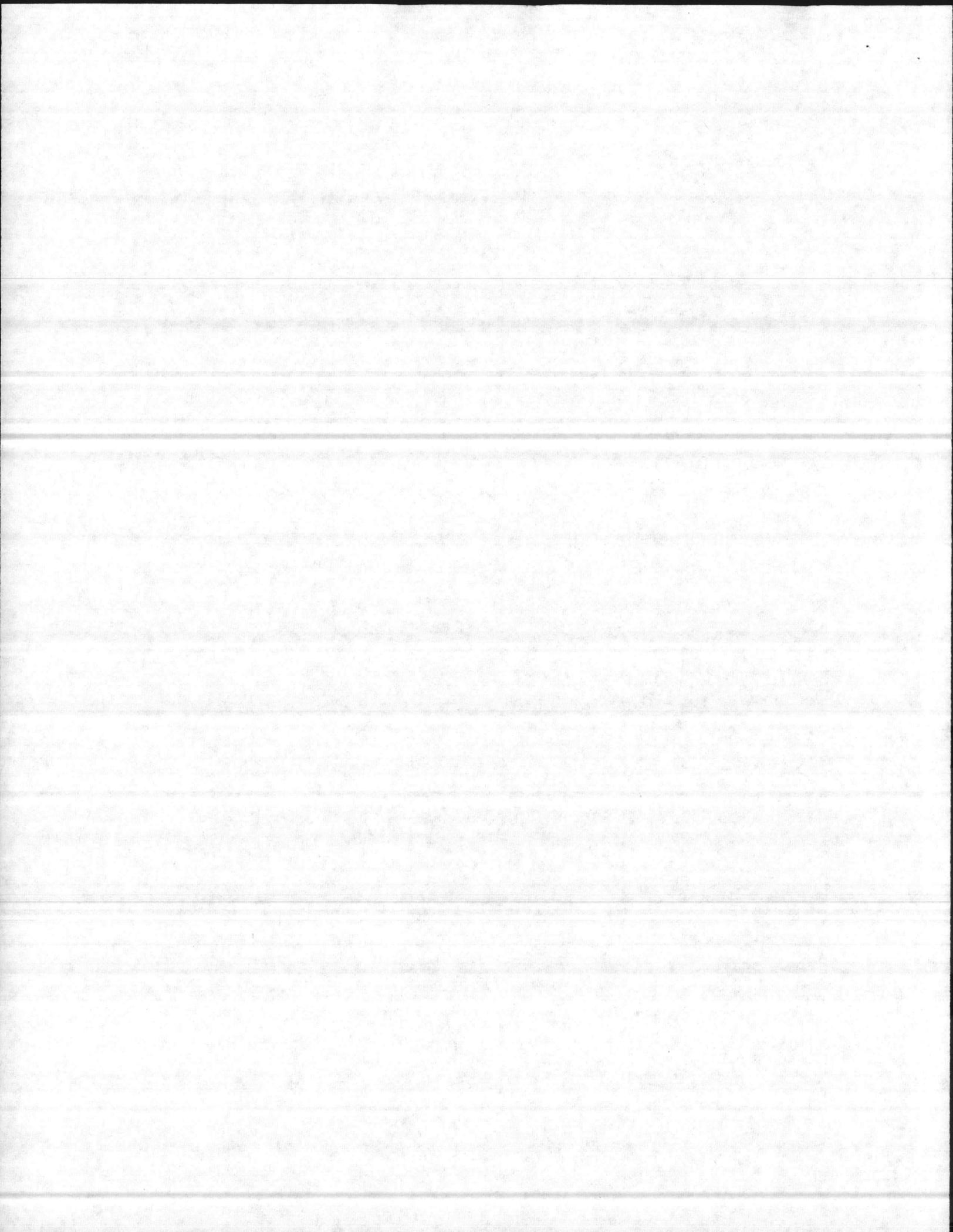
EXIT LIGHTS (3)

ON THE THREE EXITS IN THE CORRIDORS.

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FLOOD LIGHTS

SPACED SO AS ALL CORNERS OF BUILDING CAN BE SEEN FROM A DISTANCE.



## INTRUSION DETECTION SYSTEM

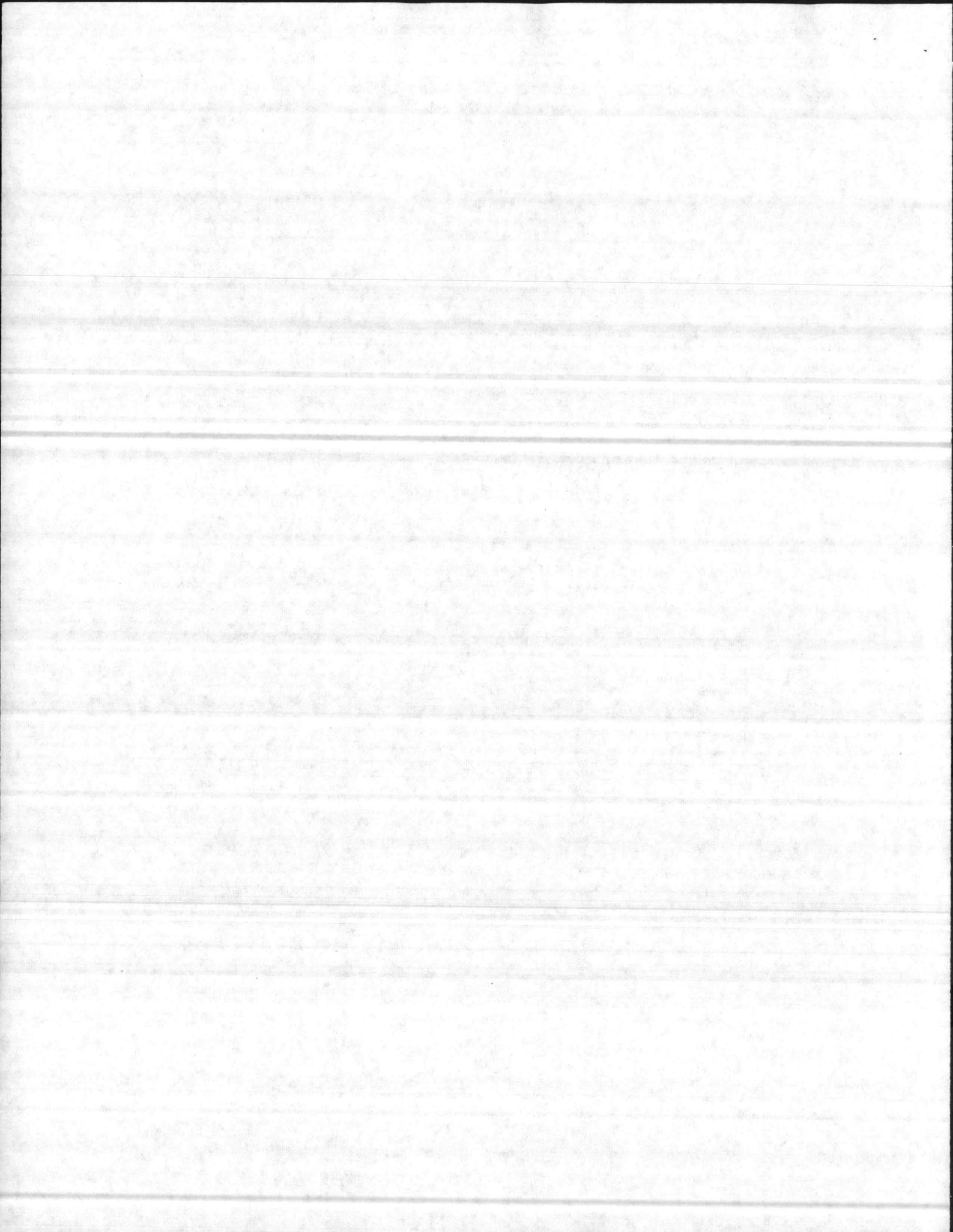
### REQUIREMENTS

- A. BALANCED MAGNETIC DETECTORS SHALL BE INCORPORATED INTO THE FLOORS (DOUBLE-FLOORS MAY REQUIRE TRIPLES).
  - B. CAPACITANCE ALARMS SHALL BE INCORPORATED INTO THE WALLS, WINDOWS, DOORS AND WALLS.
  - C. MOTION DETECTORS SHALL BE INCORPORATED INTO THE FLOOR AND THE ROOF OF THE BUILDING.
  - D. VIBRATION DETECTORS SHALL BE INCORPORATED INTO THE WALLS, FLOORS AND CEILING OF THE BUILDING.
  - E. LINE SUPERVISION SHALL BE INCORPORATED TO DETECT SIGNAL CUTTING, SHORTING, OR SPlicing OF THE TRANSMISSION LINE. ATTEMPTS AT GAINING ACCESS TO , OR SUBSTITUTION OR NEUTRALIZATION OF ANY SENSOR SHALL BE DETECTED AND SIGNAL.
  - F. A BACK- UP, STANDBY POWER SOURCE OF 4 HRS. MINIMUM DURATION SHALL BE PROVIDED TO ENABLE UNINTERRUPTED OPERATION FOR THE SENSOR SYSTEM.
  - G. IDS WILL INCLUDE A CENTRAL CONTROL STATION WHERE ALARMS ANNUNCIATE.
  - H. THE IDS SHALL HAVE A PRIMARY MONITOR (ATPMO) AND A SECONDARY MONITOR (AT THE BUILDING). THE ALARM SHALL SOUND ON BOTH MONITOR UNITS AND IT SHALL NOT BE POSSIBLE FOR AN OPERATOR AT ONE MONITOR FROM SOUNDING AT THE REMOTE UNIT. ON/OFF SWITCHES MUST NOT BE LOCATED AT A CENTRAL CONTROL STATION AND ACCES/SECURE SWITCHES MUST BE LOCATED WITHIN THE ALARMED AREA.
2. APPROVED SYSTEM- THE BEST APPROVED SYSTEM IS THE AN/FSS-9(V) JOINT-SERVICE INTERIOR INTRUSION DETECTION SYSTEM.

### 3. PARTS, FSN, NSN

A LISTING OF THE PARTS REQUIRED FOR THE IDS SYSTEMS CAN BE FOUND IN OPNAVINST 5530.13 pg.VII-7.

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1. MATERIALS-ALL MATERIALS SHALL BE ADMINISTERED AS SPECIFIED IN THE CONTRACT DOCUMENTS.
2. MOUNTING-ALL FENCING SHALL BE MOUNTED ON A SYSTEM OF APPROPRIATE HEIGHT AND SHALL BE REINFORCED CORNERS AND GATE OPENINGS. POST, BRACING AND OTHER STRUCTURAL MEMBERS SHALL BE ON THE INSIDE OF THE FENCE FABRIC.
3. HEIGHT-MINIMUM HEIGHT TO THE TOP OF THE FENCE FABRIC WILL BE SIX FEET INCLUDING CUT RIGGERS.
4. CORNERS-POSTS SHALL BE 1 1/2 INCHES LONG, 45 DEGREES (FACING-OUTWARD), STRUNG WITH THREE STRANDS OF BARBED WIRE EVENLY SPACED.
5. OPENINGS-FENCING WILL HAVE A MINIMUM OF VEHICLE AND PEDESTRIAN GATES, CONSISTANT WITH OPERATIONAL REQUIREMENTS. UNLESS MANNED CONSTANTLY GATES WILL BE SECURED WITH LOCKS THAT MEET OR EXCEED THE CRITERIA OF MILSPEC. MIL-P-43851, AND 1/2 INCH CHAIN.
6. BUILDING WALLS-BUILDING WALLS MAY BE INCORPERATED INTO THE BARRIER SYSTEM, PROVIDED THEY OFFER PROTECTION AGAINST INTRUSION EQUIVELENT TO THAT OF THE PERIMETER BARRIER AND ARE SUBJECT TO VISUAL OBSERVATION.
7. CLEAR ZONES-CLEAR ZONES SHALL EXTEND A MINIMUM OF 20 FEET ON THE OUTSIDE AND 30 FEET ON THE INSIDE OF THE PERIMETER FENCE. CLEAR ZONES WILL BE FREE OF ALL OBSTACLES, TOPA GRAPHICAL FEATURES AND VEGETATION EXCEEDING 8 INCHES OF HEIGHT.

